PATENT

Atty Docket No.: 10005208-1
App. Ser. No.: 09/891,325

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks. Currently, claims 1-11 are pending in the present application of which claim 1 is independent.

Claims 1-3, 5, and 7 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Chung et al. (U.S. Patent Number 5,757,077), hereinafter "Chung."

Claims 4, 6, and 10-11 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chung in view of Johnson (U.S. Patent Number 6,689,644), hereinafter "Johnson '644."

The above rejections are respectfully traversed for at least the reasons set forth below.

Telephonic Interview Conducted

The Applicant wishes to thank Examiner Luu for the courtesies extended during the telephonic interview conduced December 21, 2005. During the interview, claim 1 and the primary reference cited in the Third Office Action, Chung, were discussed.

The Applicant's representative pointed out that Chung did not appear to teach a substantially thin dielectric layer, because the barrier 214', relied on to teach this feature in the Third Office Action, was formed of a metallic material, Ti, and therefore, could not act as a dielectric. With respect to this point, Examiner Luu stated that a closer inspection of Chung would have to be conducted to verify the materials used in the barrier 214'. The Applicant's representative also pointed out that the reference did not appear to support the assertion, made in the Third Office Action that the region cited acted as an on-chip capacitor. With respect to this point, Examiner Luu stated that the region shown in FIG. 19 was capable of

inherently acting as an on-chip capacitor. Examiner Luu also stated that amending claim 1 to include the materials which the electrodes and dielectric layer comprise may overcome the rejections and place the application in condition for allowance. However, the Examiner could not provide a definitive answer on this possibility during the interview. Follow-up calls were placed to Examiner Luu on December 21 and 22, however, they did not result in further communication.

Claims 8-9

Claims 8-9 are not listed in the header of the 35 U.S.C. § 103 rejection of the Third Office Action. The Examiner is thus respectfully requested to correct this error in any future correspondence.

Claim Rejection Under 35 U.S.C. §102(b)

The test for determining if a reference anticipates a claim, for purposes of a rejection under 35 U.S.C. § 102, is whether the reference discloses all the elements of the claimed combination, or the mechanical equivalents thereof functioning in substantially the same way to produce substantially the same results. As noted by the Court of Appeals for the Federal Circuit in *Lindemann Maschinenfabrick GmbH v. American Hoist and Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984), in evaluating the sufficiency of an anticipation rejection under 35 U.S.C. § 102, the Court stated:

> Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.

Therefore, if the cited reference does not disclose each and every element of the claimed invention, then the cited reference fails to anticipate the claimed invention and, thus, the claimed invention is distinguishable over the cited reference.

The Third Office Action rejects claims 1-3, 5, and 7 as allegedly being anticipated by Chung. It is respectfully submitted that Chung does not disclose each and every element in claims 1-3, 5, and 7, arranged as in the claims, for at least the following reasons:

The Third Office Action alleges that FIG. 19 of Chung teaches the elements of claim 1. More specifically, the Third Office Action alleges that reference character 230 teaches a "first electrode," the reference character 214' teaches a "dielectric layer," deposited over the first electrode, and that the reference character 218' teaches a "second electrode" formed over the dielectric layer."

However, it is respectfully submitted that the barrier 214' of Chung fails to teach a substantially thin dielectric layer, as recited in claim 1. Chung specifically discloses that "the barrier layer 210-214 is a bi-layered film of Ti (Titanium) and TiNx (Titanium Nitride)." (See column 4 lines 10-11). The passage further states that sputter deposited TiW (Titanium-Tungsten) or W (Tungsten) may also be employed in the place of TiNx. As can be observed by the periodic table of elements, both Ti and W are metals and strong conductors. In contrast, as is known in the art a dielectric is resistant to the flow of electric current. Therefore, the barrier 214' of Chung is essentially the opposite of the dielectric layer recited by claim 1.

The Third Office Action further alleges that an on-chip capacitor is formed in a crossover area of the first metal layer 230, the second metal layer 218'. However, the two metal layers are in direct electrical contact with each other because the barrier 214' is also a

conductive metal. As is known in the art, two metal layers, plates or conductors of a capacitor are separated such that they can each hold an opposite electric charge. The two metal layers of Chung are in direct electrical contact, however (See FIG. 19), and thus they cannot possibly hold opposite charges. Therefore, contrary to the Examiner's assertion, the structure of FIG. 19 cannot act as a capacitor.

Accordingly, it is respectfully submitted that Chung does not disclose each and every element of claim 1 for at least the reasons set forth above. Thus claim 1, and its dependent claims 2-3, 5, and 7 are allowable over the references of record.

With respect to claim 3, the Third Office Action states that Chung teaches a first and second electrode configured to be substantially parallel in column 10, lines 56-58. However, there is no column 10 in Chung. Chung only contains a total of 8 columns. The Applicant respectfully requests clarification on this point, because it does not appear that Chung teaches the features of claim 3.

Claim Rejection Under 35 U.S.C. §103(a)

The test for determining if a claim is rendered obvious by one or more references for purposes of a rejection under 35 U.S.C. §103 is set forth in MPEP §706.02(j):

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

As set forth in MPEP §2141.01, before establishing a *prima facie* case of obviousness with the cited references, "it must be known whether a patent or publication [that is used as a cited reference] is in the prior art under 35 U.S.C. § 102." Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1568 (Fed. Cir. 1987). Thus, if a reference is not qualified as prior art under 35 U.S.C. § 102, it is not qualified as prior art under 35 U.S.C. § 103.

Claims 4, 6, and 10-11 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chung in view of Johnson '644.

Because claims 4, 6, and 10-11 depend on claim 1, it follows that claims 4, 6, and 10-11 are allowable for the same reasons set forth above for the allowability of claim 1.

Also, as stated in the previous Response to the Second Office Action, it is respectfully submitted that Johnson'644 is not qualified as prior art under 35 U.S.C. § 103 because it is not qualified as prior art under 35 U.S.C. § 102. Specifically, Johnson'644 was filed on April 22, 2002 as a divisional application of a parent application that was filed on August 13, 2001. Thus, the earliest date for which Johnson'644 qualifies as prior art under 35 U.S.C. § 102, specifically, 102(e), is August 13, 2001. The present application was filed on June 27, 2001. Therefore, Johnson'644 is not qualified as prior art under 35 U.S.C. § 102(e) with regards to the present application. It follows that Johnson'644 cannot be combined with Chung to reject claims 4, 6, and 10-11 under 35 U.S.C. § 103(a).

This argument was presented in the previous Office Action, but failed to receive a response from the Examiner. If Johnson '644 is relied upon in a subsequent rejection, the Applicant respectfully requests clarification or reasons why Johnson '644 could possibly qualify as prior art.

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Accordingly, it is respectfully submitted that claims 4, 6, and 10-11 are allowable over the references of record.

Conclusion

In light of the foregoing, withdrawal of the rejections of record and allowance of this application are earnestly solicited.

Should the Examiner believe that a telephone conference with the undersigned would assist in resolving any issues pertaining to the allowability of the above-identified application, please contact the undersigned at the telephone number listed below. Please grant any required extensions of time and charge any fees due in connection with this request to deposit account no. 08-2025.

Respectfully submitted,

Dated: December 27, 2005 By Timothy Kang Reg. No. 46,423

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